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A L E C T U R E .

EXOPHTHALMIC GOITRE.

A CLINICAL LECTURE DELIVERED AT STARLING MEDICAL
COLLEGE, COLUMBUS, OHIO,

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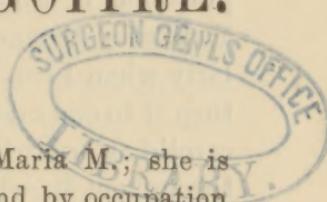


[REPRINTED FROM THE OHIO MEDICAL AND SURGICAL JOURNAL.]

COLUMBUS:
NEVINS AND MYERS, BOOK AND JOB PRINTERS.
1877.

A LECTURE.

EXOPHTHALMIC GOITRE.



GENTLEMEN: This patient's name is Maria M.; she is twenty-seven years of age; unmarried; and by occupation a seamstress. She is of medium height, rather slender, and does not appear to be very strong. She has sandy hair, fair skin, which, over the face and neck, is flushed; irregular features, blue eyes, which are very prominent, or more properly protrude from the orbits, and seem to have less freedom of movement than is natural. You will notice that the lips and gums, and the edges of the eyelids as well, have a bright color; positive evidence that there is not anæmia in this case.

The patient trembles, probably in part from her presence in an unaccustomed place, but not altogether from this, for the same symptom has been observed by me when she has consulted me at my office, when there was nothing to disturb her. Her respiration is much hurried, but not otherwise embarrassed; she has no cough, and no pain in her chest.

Her neck is thicker than it should be in a person of her proportions, particularly below and at the sides; its taper from below upward is more abrupt than normal. The tissues of the inferior part of the neck appear swollen, or rather

hypertrophied, and, as already remarked, the skin is flushed or hyperaemic, and the whole neck is flattened from before backward. You will observe that the thyroid body, or glands, is enlarged to several times its normal bulk, and that the enlargement is not symmetrical, being greatest on the right side.

This is generally the case when this body is enlarged from any cause, unless by acute inflammation, as is supposed from the fact that the right lobe is most plentifully supplied with blood from larger size of the vessels. There is strong pulsation in this swelling, quite perceptible, I presume, to those at a distance. There is also to be observed, particularly when I bend the patient's neck a little backward and turn it to one side, throbbing pulsation over the track of the carotid artery, which appears from the touch to be enlarged throughout its whole length as far as it is superficial. This is as strong, as you can see, on one side as on the other. My fingers are distinctly moved by it. Pressure on the thyroid body gives no pain. The body is quite compressible, and elastic. With each pulsation of the heart, a thrill very decided in character is conveyed from the tumor to the hand.

The patient informs me that her eyes, notwithstanding their great protrusion, give her no pain, and that her vision is not interfered with, except that she thinks she is a little near-sighted, and now and then is somewhat annoyed by black spots floating up and down a little in front. Such spots are observed in various affections, and are called *muscae volitantes*. They frequently disappear altogether to return again when there is excitement or fatigue. This symptom has little significance in this case.

The conjunctivæ are hyperaemic, but there is no evidence of inflammation, notwithstanding the fact that the lids can scarcely be made to cover the globes. This is a somewhat characteristic condition, for in other diseases when the conjunctivæ are exposed, as you see here, inflammation is speedily set up.

Although the respiration is hurried there is no evidence of disease of the lungs. Percussion and auscultation are normal.

The impulse of the heart is much stronger than is natural or healthy. You can see that it is conveyed to my hand. The sounds of the heart appear to be normal, but its rhythm is changed. The contractions appear to have unequal force. With every tenth or twelfth beat there is an intermission, and simultaneously the irregularity of the contraction is increased. This is so marked as to convey the idea of some animal struggling to escape from a closed sac.

I have observed this peculiar irregularity in another case, in which there was disease of the valves including the tricuspid. Percussion proves that the area of the heart's dullness is increased.

I infer that the heart is hypertrophied, and venture to express the opinion that there is something wrong with the tricuspid valve, though there is nothing except the alteration of the rhythm of the heart, to support such an opinion.

The pulse at the wrist is strong, full, bounding, and very frequent. It is forty beats to the quarter of a minute. This is exceedingly rapid. Perhaps this is due in part to mental excitement, but not wholly, for I have never found it below one hundred and twenty to the minute since the patient has been under my observation. Frequent pulse is one of the distinctive symptoms of the disease before us, and makes its appearance first of all the symptoms. It is not uncommon to find the pulse ranging from one hundred and twenty to one hundred and sixty to the minute, even before any change can be detected in the eyes or the thyroid gland.

The skin is moist, and not above the normal temperature.

The patient has moderately good appetite and fair digestion, though she is subject to habitual constipation. There is appreciable edema of the feet and legs, probably due to the state of the circulation. The remaining functions are

normal, except that of menstruation which has been wholly suspended, without pain or other evidence of disease of the uterus or its appendages, for three months. Amenorrhœa is a common feature of this disease. It is found to exist in more than half the cases.

The patient sleeps well, though she sometimes has dreams unpleasant in character.

Her history is that until rather more than eighteen months ago she had ordinary health, having never had any disease more severe than a sharp attack of remittent fever. She has had occasional attacks of ague, once or twice within ten years. She has had amenorrhœa, menstruation ceasing without apparent cause, and returning after two or three months with no more than what is called domestic treatment; the use of "home remedies" of which we hear so much, and which usually means the use of the infusion of some aromatic stimulant, as pennyroyal or yarrow, etc.

She is poor and obliged to work constantly; her occupation forbids exercise and amusement, and predisposes to uterine disorders, and to constipation of the bowels; so it is not surprising that she should have suffered in this way, without other cause for amenorrhœa, and no other cause appears to have existed for those earlier interruptions of the function. Once or twice she has had what she supposed to be slight rheumatic pains, but she has never suffered from a decided attack of rheumatism.

I have not been able to trace any hereditary tendency in any direction, her parents, brothers, and sisters having enjoyed immunity from constitutional diseases. No member of her family has suffered as she is suffering. Eighteen months ago she began to have palpitation of the heart. Palpitation of the heart means morbid increase in the contractions of that organ, with, as a consequence, more decided and sharper impulse. She thinks the action of the heart has never since been normal. At first the disturbance

was not sufficient to cause annoyance, but it has constantly increased, and now, even when she is feeling best, it gives discomfort. Sometimes it is so great as to occasion much distress, and to impede her respiration. At this moment her breathing is embarrassed from overaction of the heart. One year ago, she noticed for the first time that the thyroid gland was enlarged. The enlargement commenced on the right side; very soon it became apparent that the left lobe was also swollen, and the whole gland has continued to grow to the present time. It has materially increased in bulk since last summer, when I first saw the patient.

I do not suppose it will go much beyond its present status, as there is not very great hypertrophy, usually, in cases of this kind. There are, however, exceptions. I remember one which came under my observation some years ago, in which the gland was as large as common in ordinary goitre or bronchocele.

With the enlargement of the thyroid gland, the tissues of the neck became gradually hypertrophied to their present condition.

The patient thinks the change in her eyes began simultaneously with the enlargement of the gland. It was scarcely perceptible at first, but is now so great that the lids cannot be made to close perfectly over the globes.

The throbbing of the carotids has increased with the other symptoms; not perceptible at first to bystanders, it has become the fourth most prominent symptom.

The patient suffers frequently from a feeling of fullness of the head, and sometimes from headache, which, however, is not severe. She also complains that she has occasionally a sensation of ringing and hissing noises in her ears.

What is the disease? It is a case of exophthalmic goitre, Graves's or Basedow's disease, a malady described nearly at the same time in England by Dr. Graves, and in Germany by Dr. Basedow, and sometimes called after one and again

after the other of these gentlemen. More commonly it is known as exophthalmic goitre, from its most striking features, the protrusion of the eyes and the enlargement of the thyroid gland. This is the best name, because it expresses more than the others.

This, you will admit, is a peculiar ailment. It is a puzzling one as well. Much investigation has been made with a view of ascertaining its etiology and pathology, but so far with only meagre results. Very little is accurately known with regard to either. It has been asserted that it is sometimes connected with structural disease of the heart, and this may be true of the case before you; but it is seldom that we observe any of the symptoms which characterize this malady in connection with those of the more common diseases of the heart; and the hearts of persons who have died while suffering from exophthalmic goitre, unless hypertrophied, have seldom been found morbid.

Morbid enlargement of the thyroid gland is frequently observed in connection with hyperæmic and inflammatory conditions of the uterus and ovaries, but we find amenorrhœa associated with this disease more frequently than any other uterine disorder, almost always apparently as a consequence, not as a cause, the menses ceasing after the characteristic symptoms have been some time in existence. None of the other organs appear to have any part in the etiology, as they are found healthy after death, or, if diseased, the change is secondary or has a different pathological significance.

It seems to be an idiopathic malady having its origin in an obscure change in the innervation of the organs involved. It is supposed that this change involves in the main that portion of the sympathetic system which supplies the heart and the blood-vessels springing from it. This opinion is based on the fact that unnatural conditions have been found in the main trunk of the sympathetic nerve, in its cervical portion, in persons who have died while suffering from the disease.

It is supposed to be paralysis, because the effect is somewhat the same as is observed from loss of power in the vaso-motor nerves in other parts of the body, and because of the absence of all change which might be attributed to inflammation or to one of the several forms of degeneration.

Increased frequency of the action of the heart is the first, and with the remarkable thrill pervading the arterial system, especially in the upper portion of the body, which accompanies it, continues to be the most remarkable symptom throughout. As we have seen, it originates without perceptible antecedent change in the structure of the organ, and we are obliged to suppose that the mischief lies in the nerves which control its motions. Increased action is what occurs when these nerves are severely injured or divided. This is especially noticeable when the cardiac portion of the pneumo-gastric is cut, but it is also observed when injury is done to the cardiac plexus. Because the action of the heart is disordered when the inhibitory nerves are divided and connection with the nerve centers is severed, from the similarity of the symptoms, it may be supposed that loss of function or paralysis occurs in this disease through morbid change in the same nerves.

The increased frequency of the action of the heart, and the hypertrophy of that organ, found in occasional cases, is thought to be in compensation for loss of strength.

The paralysis cannot involve the entire nerve supply of the heart; else, we should naturally think, the disease would prove uniformly and immediately fatal.

The dilatation of the blood-vessels, the enlargement of the gland, together with the protrusion of the eyes, may depend upon the extension of the morbid change in the nerves, or merely upon the increased quantity, and the rapidity with which the blood is impelled through and into the parts. In some cases it would appear to be the latter only, for by pressure the swelling of the gland and the protrusion of the eyes

may be quickly and almost completely reduced for the moment. In occasional cases, after death, the eyes return to their normal position, and no change of structure is discovered in the orbits, even when there has been much distortion, but much more frequently abnormal growth of connective tissue and adipose tissue is found in the orbits and in the gland. This is what occurs in spurious hypertrophy, an ailment thought to arise from disease of the nerves of the parts affected.

Judging from the appearance of this woman's neck, I should say there is more than mere hyperaëmia. The vessels are enlarged in calibre, and their walls are thickened. There seems also to be hypertrophy of the tissues immediately surrounding the vessels. I suspect if we could make the proper examination, we should find the connective, and, to some extent, adipose tissues increased in the parts involved. The muscles are apparently normal. The abnormal changes are not always so regular as you observe them to be in this case. Sometimes the sole symptom is the unnatural action of the heart with a hyperaemic condition of the neck. Again there will, in addition, be protrusion of the eyes without swelling of the gland, and now and then swelling of the gland without distortion of the eyes. Most frequently when there is irregularity, the change is marked in the heart and eyes, while the gland remains nearly normal. Degrees of severity are also noticed. Now and then, with the disturbed action of the heart, there is just enough deformity to enable the acute diagnostician to recognize his case.

In other cases the change is so great as to give the patient a hideous appearance; a most ferocious expression, particularly if the subject is a male, the effect being heightened by the more strongly marked features and the beard.

The greater number of persons who suffer from this disease are females, generally unmarried, between the ages of twenty-five and forty years, and the class to which our patient

belongs, seamstresses, seem peculiarly liable to its attacks. It has been observed in married women. I once saw a marked case in a woman (she had the most hideous face I ever beheld), who was the mother of several children, and who, curiously enough, afterward became insane.

It sometimes affects young girls, but not, so far as I know, women who have ceased to menstruate. It is not common among men.

I may say that so far as my experience extends, the subjects of the disease are irritable, crotchety, and disposed to melancholy, but I never heard of but the one who became insane. The amatory passion is inordinately developed in occasional cases.

The larger number of patients who have applied to me for this disease, have had the nervous or nervo-sanguine temperament, well-marked; some have had the bilious temperament.

The most common complication is anemia, which is present in greater or less degree in the majority of cases, but not in all. Our patient, as we have already observed, is certainly not anemic, at least not appreciably so. Sometimes there is cirrhosis of the liver, or sometimes inflammation or simple hypertrophy, and occasionally the spleen is inflamed, enlarged, or softened. Catarrh of the stomach is now and then a complication, but none of these are constant, and do not appear to have any direct connection with the original malady, unless such as may be supposed to arrive from the disordered circulation.

As said a few moments ago, anemia is the most constant complication, and it is difficult not to believe that there is some direct connection between the changed function of the heart and the state of the blood.

The disease is usually chronic in its progress, slowly developed and continuing months, more commonly for years. But occasionally it is acute and runs a short course. It does

not seem, in the chronic form, to tend toward a fatal issue. I do not remember a recorded case in which it of itself proved fatal. But its subjects do not live to old age, they generally die early of some intercurrent trouble, most commonly of pneumonia, to which affection they seem, as one should suppose, peculiarly liable. Hepatitis and cirrhosis are sometimes the causes of death. Any acute disease seems to acquire increased gravity.

Various plans of treatment have been adapted from time to time, none with entirely satisfactory results. The indications seem to be the control of the action of the heart, and at the same time to improve the strength of the organ by influence upon its nerves, or through the blood and general system. Some entertain a different idea and prescribe alternative medicines, inferring, I suppose, the disease to be of inflammatory origin. Trousseau recommends iodine, and states that he obtained benefit from it; others have not had good results from its effects. I prescribed it in medium doses in one case, with the effect of making my patient weak, producing increased frequency of the action of the heart, and menorrhagia. I have not prescribed it since.

The various medicines containing the elements of hydrocyanic acid, and the dilute acid in proper form, are recommended by the authorities as beneficial, and possibly they are so, but their action seems to me to be contrary to that most desirable under the circumstances. They all depress instead of strengthening the action of the heart. Besides, they are with the exception of the oil of bitter almonds, and the cyanide of potassium, variable in strength and therefore uncertain in effect. All are dangerous as poisons.

Belladonna controls and strengthens the heart, and is a suitable medicine. I have not been satisfied with it, but you will have ample opportunity to test it for yourselves. It is efficient when given by the stomach, but more so when administered hypodermically. Atropine should be used in

preference to the other preparations, and I need only remind you that it is a powerful drug.

Digitalis is held in most estimation by the majority of practitioners in this as in most other diseases in which the action of the heart needs control. It is well known that it strengthens the heart, while it renders its action more equable and slower. To produce this effect it must be given in sufficient doses, and continued until the desired result is attained. The alkaloid digitalin is the most reliable preparation; but the tincture is very good, and neither so costly, nor dangerous in careless hands.

Ergot of rye, from its effect in causing tonic contraction of non-striated muscular fibre, of which there is abundance in the heart and blood-vessels, might be of service. It is, as you know, used to control hemorrhages and passive hyperæmia and its consequences, including many forms of nervous disease.

The nitrate of amyl has been used, it is said, with the effect of lessening the subjective symptoms, but with no material benefit.

When there is anemia, as is often the case, the preparations of iron may be used with the hope of repairing the blood. Perhaps as good a combination as we can prescribe is the tincture of digitalis, with a preparation of iron.

Too often you will be utterly disappointed in the results of treatment. Not many cases have been reported. While I would advise against hyper-medication, I think you should not fold your hands and declare yourselves without resource. Perhaps some one of you may discover the nature of the disease, and the appropriate remedy. I am obliged, gentlemen, for your patience and attention.

